

This listing of claims replaces all prior versions and listings of claims in the patent application.

Listing of Claims:

Claim 1. (currently amended) A system for provisioning satellite resources in a satellite communication network ~~having comprising:~~

at least one satellite, said satellite comprising ~~a payload processor for configuring said satellite resources, a plurality of antennas for receiving transmissions from geographically distinct cells, a plurality of demodulators for demodulating transmissions in particular frequency ranges, a switch matrix for connecting said antennas to said demodulators, and a payload processor for configuring said switch matrix to configure said satellite resources, wherein said resources comprise~~ a plurality of channels for transmitting information to or from said satellite; ~~said system comprising:~~

a network interface adapted to receive requests for satellite resources,

a satellite resource allocation plan, comprising information related to the satellite resource configuration over time, and

a request processor adapted to determine whether said requests can be fulfilled based on a plurality of system constraints including the satellite resource allocation plan, to send commands to said payload processor in order to configure said satellite resources to fill said requests, and to update said satellite resource allocation plan based on requests which can be fulfilled.

Claim 2. (original) A system for provisioning satellite resources as in claim 1, wherein said network interface includes a web browser.

Claim 3. (original) A system for provisioning satellite resources as in claim 1, wherein said network includes the Internet.

Claim 4. (original) A system for provisioning satellite resources as in claim 1, wherein said plurality of system constraints comprise a number of antennas on board said

satellite, each said antenna adapted to transmit signals to or receive signals from geographically distinct cells.

Claim 5. (original) A system for provisioning satellite resources as in claim 4, wherein said plurality of system constraints comprise a number of demodulators on board said satellite, each said demodulator adapted to demodulate signals in a particular frequency range.

Claim 6. (original) A system for provisioning satellite resources as in claim 5, wherein said plurality of system constraints includes a switch matrix adapted to connect said antennas to said demodulators.

Claim 7. (original) A system for provisioning satellite resources as in claim 6, wherein said network interface includes a web browser.

Claim 8. (original) A system for provisioning satellite resources as in claim 6, wherein said network includes the Internet.

Claim 9. (original) A system for provisioning satellite resources of a satellite, said satellite resources comprising a plurality of antennas for receiving transmissions from geographically distinct cells, a plurality of demodulators for demodulating transmissions in particular frequency ranges, a switch matrix for connecting said antennas to said demodulators, and a payload processor for configuring said switch matrix, said system comprising:

a network interface adapted to receive requests for satellite resources; and

a request processor for determining whether said resources are available to fill said requests based on a resource allocation plan, and for sending commands to said payload processor in order to fill said requests;

wherein said payload processor is adapted to configure said switch matrix over a period of time based on said resource allocation plan.

Claim 10. (original) The system of claim 9, wherein said request processor is adapted to determine, for each of said requests,

- which geographic cell is associated with said request,
- whether there is an available frequency band within said cell to fulfill said request,
- whether a demodulator is available to demodulate said available frequency, and
- whether said switch matrix is capable of associating an antenna associated with said cell with said available demodulator.

Claim 11. (original) The system of claim 9, wherein said request processor is adapted to determine, based on existing satellite resource assignments, a frequency assignment that minimizes interference within the requesting cell and neighboring cells, and to assign a frequency to fulfill said request based on said determination.

Claim 12. (original) The system of claim 9, wherein said request processor is further adapted to transmit information representing the status of said satellite resource allocations to said network interface.

Claim 13. (original) The system of claim 9, wherein said network interface includes a web browser.

Claim 14. (original) The system of claim 9, wherein said network includes the Internet.

Claim 15. (original) A method of allocating satellite resources in a satellite communications system having at least one satellite, said satellite having a plurality of demodulators for demodulating signals received in certain frequency bands, and further having a plurality of spot beam antennas for receiving signals from certain geographic cells, and further having a switching matrix for associating antennas with demodulators, the method comprising the steps of:

providing a network interface adapted to receive requests for satellite resources over a network and to provide information on the status of said requests;

receiving said requests;

determining, based on known constraints, whether said requests can be filled, and if said requests can be filled;

transmitting commands to said satellite, causing said satellite to allocate resources to fill said requests.

Claim 16. (original) The method of claim 15, wherein said determining step further comprises the steps of:

for each of said requests, determining which geographic cell is associated with said request;

determining whether there is an available frequency band within said cell to fulfill said request;

determining whether a demodulator is available to demodulate said available frequency;
and

determining whether said switch matrix is capable of associating an antenna associated with said cell with said available demodulator.

Claim 17. (original) The method of claim 15, further comprising the steps of:

determining, based on existing satellite resource assignments, a frequency assignment to fulfill said request that minimizes interference within the requesting cell and neighboring cells;
and

assigning a frequency to fulfill said request based on said determination.

Claim 18. (original) The method of claim 15, further comprising the step of transmitting information representing the status of said requests, and the frequencies allocated to fulfill said requests, to said network interface.

Claim 19. (original) The method of claim 15, wherein said network interface is a web browser.

Claim 20. (original) The method of claim 15, wherein said network is the Internet.

Claim 21. (currently amended) A computer readable medium of machine instructions, adapted to be executed by a computer, comprising:

(a) a first set of instructions, adapted to control the computer to determine the authorization level of a user;

(b) a second set of instructions adapted to determine a set of satellite resources associated with said user, based on said authorization level;

(c) a third set of instructions adapted to receive requests to allocate said resources from said user;

(d) a fourth set of instructions adapted to determine, based on a plurality of system constraints, whether said requests can be fulfilled wherein said plurality of system constraints comprises a number of active demodulators available in a satellite for a plurality of subbands and a configuration of a switch matrix in the satellite, said switch matrix being adapted to associate satellite antennas with active demodulators;

(e) a fifth set of instructions adapted to provide feedback to said user, including information on which of said requests cannot be fulfilled;

(f) a sixth set of instructions adapted to generate commands to modify a satellite configuration to accommodate said requests; and

(g) a seventh set of instructions adapted to transmit said commands to a satellite payload processor to be executed.

Claim 22. (original) The computer readable medium of claim 21, wherein said machine instructions are adapted to be executed as requested via a web browser.

Claim 23. (original) The computer readable medium of claim 21, wherein said machine instructions are stored on a server connected to the Internet.

Claim 24. (original) The computer readable medium of claim 21, wherein said satellite resources comprise channels within frequency bands.

Claim 25. (original) The computer readable medium of claim 24, wherein said frequency bands are within the Ka band.

Claim 26. (original) The computer readable medium of claim 21, wherein said plurality of system constraints comprises:

- a number of active demodulators available for a plurality of subbands;
- a configuration of a switch matrix, said switch matrix being adapted to associate satellite antennas with active demodulators;
- an interference between common subbands in geographically neighboring cells; and
- a preferable configuration of data channel types within subbands.